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ABSTRACT

In Virginia, distance learning means the "Electronic Classroom," which is a distance education program of two-way audio and one-way video broadcast transmission of instruction from Varina High School (since September 1984) and Wise Vocational-Technical School (since September 1987). Each distance learning receive classroom is equipped with a television set, a videocassette recorder/player, a programmable telephone, and, in pilot schools only, facsimile equipment. These classrooms provide access to courses in advanced placement calculus, advanced placement English and composition, and Latin I and Latin II (in central Virginia). Many of the costs for the program are borne by the State Department of Education, and it serves 56 schools in 30 school divisions. In 1989-90, the program will be offered via satellite, and currently a pilot project is underway involving schools that are unable to receive the public broadcast signal. Recent legislative action will provide state funding for both satellite receipt systems for all secondary schools and statewide implementation of the Electronic Classroom program. A task force has been working on a 5-year plan for technology since October 1987, and pilot projects involving the Electronic Classroom for instruction on Japanese culture and reading comprehension have been completed. (EW)

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DISTANCE LEARNING IN VIRGINIA: ELECTRONIC CLASSROOM

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U.S. DEPARTMENT OF EDUCATION
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BACKGROUND

In Virginia, distance learning means the Electronic Classroom - live, two-way audio and one-way video broadcast transmission of instruction from Varina High School in Henrico County in central Virginia, and Wise Vocational-Technical School in Wise County in southwest Virginia. Each distance learning receive classroom, equipped with a TV set, video cassette recorder/player, a programmable telephone and facsimile equipment (pilot schools only) provides equitable and quality educational opportunities to students through credit courses in advanced placement calculus, advanced placement English and Composition, Latin I and Latin II (in central Virginia).

The courses are offered through open broadcast by public television stations: WCVE-TV and WBRA-TV upon receipt of signal from the Electronic Classrooms via microwave broadcast. In some cases, schools receive electronic classroom instruction via cable broadcast of the public television station signal.

The Electronic Classroom began broadcast in Henrico County in September, 1984 as a part of the program of the Governor's School for Innovation and Technology. The Wise County Electronic Classroom began broadcast in Septemb

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1987 as an integral part of the County's vocational/technical program. Projects of drafting, electrical, cosmetology, food service and building construction classes are made meaningful through actual development of electronic classroom sets and provision of support systems for productions of plays for community dinner theatre performances. The Wise Electronic Classroom brings together students - advanced placement, technical, and vocational in a productive, realistic, and effective program of studies.

BENEFITS TO SCHOOL DIVISION

Through the Electronic Classroom, a participating school division can maintain local control of educational opportunities while sharing resources and expanding educational opportunities for its students. Responsibility for administration of the program including selection of facilitator, administrative contact person, final selection of students and grading of students rests with the school division. The Virginia Department of Education assists with the selection of students and program administrators by providing selection criteria and guidelines/standards for operation. Criteria and guidelines are developed in cooperation with Electronic Classroom staffs and school administrators. While grades are rarely challenged, grades for students are recommendations to school divisions.

A second benefit is the recruitment and selection of teachers and other staff. Henrico and Wise Counties employ teachers, aides and technicians, with approval by the Department of Education, through regular personnel selection channels. Teachers selected are certificated master teachers and/or teachers with required unique knowledge, skills and experience from each school division's pool of applicants. Like teachers, technicians and aides are also chosen from the school division's pool of applicants with compensation, benefits, and duties, commensurate with those of colleagues in similar positions outside the Electronic Classroom program.

Cost to the local school division is a third benefit. Since its inception, the Electronic Classroom's costs relating to start-up, technology, staff, broadcast, 800 telephone line charges and support are borne by the Virginia Department of Education. School division costs are limited to provision of support staff, textbooks, and other instruction materials, local telephone costs and a modest per pupil enrollment fee used to upgrade and replace equipment in the classroom. The per pupil enrollment fee applied since the first year of operation has been waived for students in schools receiving the Electronic Classroom signal for the first time. A more recent decision to base

the per pupil enrollment fee on the Composite Index of ability to pay will further enhance efforts to assist small, rural schools.

A fourth benefit is the provision of educational opportunity not otherwise available to students and teachers. The courses offered and those planned for expansion, including teleconferences for staff development, primarily provide instruction to small, rural schools impossible to provide through regular resources. According to a September, 1987 survey of superintendents of schools, interest is high in additional foreign language courses and science courses schools are unable to provide. A large number of school divisions, (81 percent), requested an increase in Department of Education staff development general and interactive programs in the same 1987 survey.

Finally, a fifth benefit to schools is provision of quality instruction to students and evaluation of programs. Students in small, rural divisions receive the same instruction as those in larger, urban and suburban schools participating in the program. Tests and evaluation are standard for all participants and schools.

While research on other distance learning programs reveal that interactive video instruction does not

negatively impact significantly on the effectiveness of teachers and that interactive video also does not dramatically positively impact the learning outcomes of students, Virginia's Electronic Classroom teachers believe the experience has improved their teaching effectiveness. Mrs. Anna Lee Gibson, AP English teacher at the Wise Electronic Classroom says, "After one year, I feel my organizational skills have improved. I have to plan ahead more than ever. I come to class when I do not feel well occasionally because I know the 'show' must go on. People ask me if there is a difference in student performance. I have combed the records, grades and test scores of students, and I am convinced that there is no difference in performance. Students in the electronic classroom perform as well as students in regular classes."

ENROLLMENT

From 10 schools in 10 school divisions in 1984-85, the Electronic Classroom in Virginia has grown to a service population of 56 schools in 30 divisions. Schools enrolled are located in the foothills of the Blue Ridge mountains, the tobacco belt, the Eastern Shore farmlands, and metropolitan northern Virginia near Washington, DC. While most of the schools in the project are those that: (a) do not have sufficient students to merit employment of a full-time teacher and/or (b) do not have a qualified teacher

available, a few have other reasons for participation. Reasons for northern Virginia school participation, for example, relate to economy, instruction time, and transportation. In Prince William County, students enrolled in the Electronic Classroom are Latin class overflows that would need to be transported across the densely populated county to other schools during peak traffic hours for placement in classes. The result is loss in instruction time to travel. Upon evaluation of the Latin electronic classroom course, quality of instruction, and cost, Prince William administrators chose to enroll their students in the program for Latin instruction.

The 1987 survey of schools indicated that 59 percent of the State's 137 school divisions did not offer advanced placement courses. Enrollment of schools, for example, changed annually as demographics changed. Schools that had historically not offered advanced placement courses, begin to offer courses as their curriculum was upgraded following electronic classroom use. Additionally, some teachers who were certified, but reluctant to accept advanced placement classes, became more comfortable with and knowledgeable about subject matter and eventually accepted advanced placement classes. Four previous participants have already indicated that they will begin their own classes in at least one subject area in 1988-89.

Motivation for the upgrade in course offerings at the local level may also be found in the Virginia Standards of Accreditation which state that secondary schools must offer two advanced placement courses and three credits in foreign language courses to students.

NEW DEVELOPMENTS

The growth and success of the Electronic Classroom have moved Virginia to the decision to take the program to satellite in 1989-90. In preparation, a satellite pilot project is receiving "fine tuning" for launch in 1988-89. Pilot schools are those unable to receive the public broadcast signal. The decision to expand the satellite and offer other courses was based on evaluation and planning studies. Studies prior to the decision in 1986 led to significant observations and recommendations by the Governor's Commission on Education. The Commission stated that "educational technology must take a central place in public school education. For Virginia's educational system to be among the best in the nation's, it must operate on the cutting edge. Today, that cutting edge is educational technology". Two of the Commission's recommendations were to take the Electronic Classroom into schools across the State and to initiate a loan program for financing technological equipment.

The 1988 State Legislature endorsed the recommendations of the Commission and Governor Gerald Baliles by funding satellite receive systems for all secondary schools containing grades 10-12. Through a program specifically designed to fully fund the television receive only systems across five years - 100 percent including principal and interest - schools will acquire satellite dishes and satellite receive classroom equipment. In sum, since 1984, the Legislature has fully funded operating costs of the State's two Electronic Classrooms.

Further endorsement of the Electronic Classroom by the Legislature came in Senate Bill 113 which authorizes the State Board of Education to offer the Electronic Classroom statewide by July 1, 1990. The Bill passed unanimously in both the Senate and the House.

A third Commission recommendation was to develop a detailed five-year plan for technology to make technology an integral part of education. This recommendation is also built into the strategic plan of the State Department of Education in the Commonwealth of Virginia.

A task force has been working on the 5-year plan for technology since October, 1987. Already, pilot projects involving the Electronic Classroom for instruction in

Japanese culture and reading comprehension in science have been completed. Virginia's technology programs are fulfilling the Commission's dream by helping education operate on the "cutting edge."